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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/804,722	CHOI ET AL.
	Examiner	Art Unit
	Jason M. Mandeville	2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *1-18,22,23 and 36-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-21 and 24-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “first comparison unit” and the “second comparison unit” within the “white extracting part” as claimed in **Claim 21** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 19, 20, 24-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (hereinafter "Miller" US 2004 / 0113875) in view of Kimura (US 6,475,845).

4. As pertaining to **Claim 19**, Miller discloses (see Fig. 2 and Fig. 4) an organic electro-luminescent display (OELD) device (see Page 1, Para. [0001]-[0002]) for processing multi-color gray-scale data (see Page 1, Para. [0012] and Page 2, Para. [0026]-[0030]), comprising:

a four-color converting part (see Fig. 6) to convert primary RGB gray-scale data (86, 88, 90) into compensated RGBW gray-scale data (97, 98, 99) by adding white

gray-scale data (93, 95) to the primary RGB gray-scale data (94, 95, 96, 97; see Page 7, Para. [0109]-[0113]).

While it is both implicit and necessary in the disclosure of Miller that the OELD device comprises a data driving part to process the compensated RGBW gray-scale data (98, 99) provided from the four-color converting part (see Fig. 6) to generate four-color signals in an analog type, a scan driving part to generate scan signals in sequence, and an OELD panel to emit light with a color in response to the four-color signals from the data driving part and the scan signals from the scan driving part; Miller does not explicitly describe the data driving part, the scan driving part, or the OELD panel.

Kimura discloses (see Fig. 15A, for example) an organic electro-luminescent display (OELD) device for processing multi-color gray-scale data comprising a data driving part (i.e., source signal line side driving circuit) to process gray-scale data generate color signals in an analog type (see Col. 1, Ln. 34-67 through Col. 2, Ln. 1-41 and Col. 18, Ln. 46-67 through Col. 19, Ln. 1-21), a scan driving part (i.e., gate signal line side driving circuit) to generate scan signals in sequence (again, see Col. 1, Ln. 34-67 through Col. 2, Ln. 1-41), and an OELD panel (see Fig. 15A) to emit light with a color in response to the color signals from the data driving part (i.e., the source signal line side driving circuit) and the scan signals from the scan driving part (i.e., the gate signal line side driving circuit; again, see Col. 1, Ln. 34-67 through Col. 2, Ln. 1-41). Both Miller and Kimura disclose an organic electro-luminescent display (OELD) device

for processing multi-color gray-scale data. Further, the inventions of Miller and Kimura are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Miller with the teachings of Kimura. As such, it would have been obvious to one of ordinary skill in the art that the OELD device of Miller comprises a data driving part (as shown by example in Kimura) to process the compensated RGBW gray-scale data (98, 99) provided from the four-color converting part (see Fig. 6) to generate four-color signals in an analog type, a scan driving part (as shown by example in Kimura) to generate scan signals in sequence, and an OELD panel (as shown by example in Kimura) to emit light with a color in response to the four-color signals from the data driving part (as shown by example in Kimura) and the scan signals from the scan driving part (as shown by example in Kimura).

5. As pertaining to **Claim 20**, Miller discloses that the four-color converting part (see Fig. 6) includes:

a gamma converting part (86, 88, 90) to perform gamma conversion with respect to the primary RGB gray-scale data to obtain gamma-converted RGB data (see Page 7, Para. [0109]-[0113]);

a white extracting part (92, 93, 94) to extract a white color component from the gamma-converted RGB data provided from the gamma converting part (86, 88, 90; again, see Page 7, Para. [0109]-[0113]);

a data determining part (94, 95, 96, 97) to receive the gamma-converted RGB data from the gamma converting part (86, 88, 90) and the white color component from the white extracting part (92, 93, 94) and generating four-color RGBW data by subtracting the white color component from the gamma-converted RGB data (see 94) and adding the white gray-scale data to the gamma-converted RGB data (see 97; also see Page 7, Para. [0109]-[0113]); and

a reverse-gamma converting part (98, 99) to perform reverse-gamma conversion with respect to the four-color RGBW data provided from the data determining part (94, 95, 96, 97) to generate reverse-gamma converted RGBW data to be displayed (again, see Page 7, Para. [0109]-[0113]).

6. As pertaining to **Claim 24**, Kimura discloses (see Fig. 15A and Fig. 15B) that the OELD panel includes a plurality of pixels each including:

a switching element (1501) having a conduction path to transfer corresponding one of the four-color signals (as disclosed by Miller) from the data driving part (i.e., source signal line side driving circuit) in response to corresponding one of the scan signals from the scan driving part (i.e., gate signal line side driving circuit);

a driving element (1502) having a conduction path to transfer a voltage signal provided from a power supply line (1507) in response to the corresponding one of the four-color signals provided from the switching element (1501); and

a organic electro-luminescent element (1503) to generate light in response to the voltage signal provided from the driving element (1502; see Col. 1, Ln. 34-67 through Col. 2, Ln. 1-41).

7. As pertaining to **Claim 25**, Miller discloses (see Fig. 2) that the OELD panel includes a plurality of pixels (12) each including a red sub-pixel (20), a green sub-pixel (22), a blue sub-pixel (24) and a white sub-pixel (26), wherein the red (20), green (22), blue (24) and white (26) sub-pixels each have a stripe shape and are arranged in parallel to each other (see Page 2, Para. [0027]).

8. As pertaining to **Claim 26**, Miller discloses (see Fig. 8) that the OELD panel includes a plurality of pixels (132) each including a red sub-pixel (134), a green sub-pixel (136), a blue sub-pixel (138) and a white sub-pixel (140), wherein the red (134), green (136), blue (138) and white (140) sub-pixels are arranged in a 2x2 lattice shape (see Page 9, Para. [0124]).

9. As pertaining to **Claim 27**, Miller discloses (see Fig. 10 and Fig. 11) that the OELD panel includes a plurality of pixels (172 in Fig. 10; 202 in Fig. 11) each including red sub-pixels (174, 176 in Fig. 10; 204 in Fig. 11), green sub-pixels (178, 180 in Fig. 10; 206, 208 in Fig. 11), blue sub-pixels (182 in Fig. 10; 210 in Fig. 11) and white sub-pixels (184 through 190 in Fig. 10; 212, 214 in Fig. 11), wherein the red, green, blue and white sub-pixels are arranged in a 2x3 lattice shape (see Fig. 11 and Fig. 12; also

see Page 9, Para. [0126]-[0127]). Although Miller does not explicitly disclose that the 2x3 lattice of sub-pixels includes two red sub-pixels, two green sub-pixels, a blue sub-pixel and a white sub-pixel, Miller does disclose that it is potentially more desirable to have more red and green sub-pixels than blue sub-pixels within a pixel (see Page 9, Para. [0126]). Further, Miller provides an example of a 2x3 lattice and a 3x3 lattice of sub-pixels (see Fig. 11 and Fig. 10, respectively) including more red and green sub-pixels than blue sub-pixels. As such, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the 2x3 lattice of sub-pixels disclosed by Miller can include two red sub-pixels, two green sub-pixels, a blue sub-pixel, and a white sub-pixel.

10. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Kimura and further in view of Hirano et al. (hereinafter "Hirano" WO 01 / 37249).

11. As pertaining to **Claim 21**, Miller discloses that the white extracting part (92, 93, 94) includes:

a first comparison unit (implicit in (92)) to determine which color data of the gamma-converted RGB data has a minimum value (again, see Page 7, Para. [0109]-[0113]).

Neither Miller nor Kimura explicitly disclose a second comparison unit to compare the minimum value determined by the first comparison unit with a predetermined value, wherein the white extracting part generates the minimum value of the gamma-converted RGB data as the white color component if the minimum value is smaller than the predetermined value, and generates the predetermined value as the white color component if the minimum value is equal to or larger than the predetermined value. However, Miller does disclose that many variations are possible in generating white color component.

Hirano discloses (see Fig. 1 and Fig. 3b) a liquid crystal display device for processing multi-color gray-scale data (see Abstract), comprising a four-color converting part (6) to convert primary RGB gray-scale data (Ri, Gi, Bi) into compensated RGBW gray-scale data (Ro, Go, Bo, Wo) by adding white gray-scale data (Wo) to the primary RGB gray-scale data (Ri, Gi, Bi; see Page 5, Ln. 24-34, Page 6, Ln. 1-34, and Page 7, Ln. 1-34). Hirano discloses that the four-color converting part (6) includes a white extracting part (7, 8, 9, 10, 11) including a first comparison unit (implicit in (7)) to determine which color data of the RGB data has a minimum value (Yimin; see Page5, Ln. 29-34), a second comparison unit (implicit in (7, 9, 10, 11)) to compare the minimum value determined by the first comparison unit (7) with a predetermined value (i.e., the minimum value Yimin in compared with the predetermined maximum value, Yimax, and some factor (i.e., 0.5); see Page 8, Ln. 15-34 through Page 9, Ln. 1-29), wherein the white extracting part generates the minimum value (Yimin) of the RGB data as the white

color component if the minimum value (Yimin) is smaller than the predetermined value (i.e., Yimax*0.5), and generates the predetermined value (i.e., Yimax) as the white color component if the minimum value (Yimin) is equal to or larger than the predetermined value (i.e., Yimax*0.5; see Page 8, Ln. 15-34 through Page 9, Ln. 1-29). Miller, Kimura, and Hirano all disclose display devices for processing multi-color gray-scale data. Further, the inventions of Miller, Kimura, and Hirano are in the same field of endeavor. Although Hirano discloses a liquid crystal display device, the multi-color processing techniques disclosed by Hirano are applicable to any display device, including an OELD device. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Miller, Kimura, and Hirano.

12. **Claims 28-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Kimura and further in view of Eida et al. (hereinafter "Eida" US 2001 / 0050532).

13. As pertaining to **Claim 28**, Kimura discloses (see Fig. 8A-8C, 9A-9C, and 10A-10B) that the OELD panel includes:

a first insulating layer (5002) formed on a substrate (5001);

a current control transistor (5006, i.e., EL driving TFT) formed on the first insulating layer (5002), the current control transistor (5006) providing a controlled

current (see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

a second insulating layer (5007) formed on the current control transistor (5006), the second insulating layer (5007) having contact holes in which source and drain electrodes (5024, 5025) of the current control transistor are formed (again, see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

a third insulating layer (5075, 5076) formed on the second insulating layer (5007) and the source and drain electrodes (5024, 5025) of the current control transistor;

a pixel electrode (5082) formed on the third insulating layer (5075, 5076), a part of the pixel electrode (5082) being extended to be in contact with the drain electrode (5024)of the current control transistor through a contact hole formed in the third insulating layer (5075, 5076; see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

an organic electro-luminescent layer (5086);

and an electrode layer (5087) formed on the organic electro-luminescent layer (5086) to serve as a cathode (5087) of the OELD device (again, see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47).

Miller does not explicitly disclose partition walls formed on the third insulating layer and the pixel electrode, adjacent ones of the partition walls defining a luminescent region of the OELD panel; and an organic electro-luminescent layer formed on partition walls and the pixel electrode, for emitting red, green, blue and white color light.

Eida discloses an organic electro-luminescent device for processing multi-color gray-scale data (see Page 1 through Page 2, Para. [0016]-[0019]) comprising (see Fig. 2, Fig. 3, Fig. 4, and Fig. 7) partition walls (i.e., separating walls) formed on a third insulating layer (3) and the pixel electrode (2), adjacent ones of the partition walls (3) defining a luminescent region of the OELD panel (see Page 3, Para. [0067] and [0072]; Page 4, Para. [0090]-[0091]; Page 6, Para. [0129]-[0135]; and Page 7, Para. [0149]-[0160]); and an organic electro-luminescent layer (4) formed on partition walls (3) and the pixel electrode (2), for emitting red, green, blue and white color light (see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]). Miller, Kimura, and Eida disclose an organic electro-luminescent device for processing multi-color gray-scale data. Kimura and Eida both disclose a structure for the electro-luminescent device comprising insulating layers and an organic electro-luminescent layer. While the structures of Kimura and Eida are different, both inventions disclose a means for providing multi-color gray-scale processing and both inventions are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Miller and Kimura with the teachings of Eida. As

such, the combined teachings of Miller, Kimura, and Eida disclose the claimed structure in which the organic electro-luminescent layer emits red, green, blue, and white color light.

14. As pertaining to **Claim 29**, Eida discloses that the adjacent partition walls (3) are formed to define corresponding one of red, green, and blue pixel regions (see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]). While Eida does not explicitly disclose a defined white pixel region, it would have been obvious to one of ordinary skill in the art that the combined teachings of Miller, Kimura, and Eida must incorporate the white pixel region in the structure.

15. As pertaining to **Claim 30**, Eida discloses that the organic electro-luminescent layer (4) includes red, green, and blue electro-luminescent layers formed on the red, green, and blue pixel regions, respectively, defined by the partition walls (3; again, see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]). Also, while Eida does not explicitly disclose a defined white electro-luminescent layer formed on a white pixel region, it would have been obvious to one of ordinary skill in the art that the combined teachings of Miller, Kimura, and Eida must incorporate the electro-luminescent layer formed on the white pixel region in the structure.

16. As pertaining to **Claim 31**, Eida discloses that the electrode layer is a metal layer so that light is reflected by the metal layer and emitted through the substrate (see Page 6 through Page 7, Para. 0129]-[0141]).

17. As pertaining to **Claim 32**, Eida discloses that the electrode layer is transparent so that light passes through the electrode layer (see Page 6 through Page 7, Para. 0129]-[0141]).

18. As pertaining to **Claim 33**, Kimura discloses (see Fig. 8A-8C, 9A-9C, and 10A-10B) that the OELD panel includes:

a first insulating layer (5002) formed on a substrate (5001);

a current control transistor (5006, i.e., EL driving TFT) formed on the first insulating layer (5002), the current control transistor (5006) providing a controlled current (see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

a second insulating layer (5007) formed on the current control transistor (5006), the second insulating layer (5007) having contact holes in which source and drain electrodes (5024, 5025) of the current control transistor are formed (again, see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

a pixel electrode (5082), a part of the pixel electrode (5082) being extended to be in contact with the drain electrode (5024) of the current control transistor through a

contact hole (5075, 5076; see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

an organic electro-luminescent layer (5086).

Miller does not explicitly disclose a color pixel layer formed on the second insulating layer and the source and drain electrodes, the color pixel layer including red, green, blue and white color filters; a planarizing layer formed on the color pixel layer; a pixel electrode formed on the planarizing layer, a part of the pixel electrode being extended to be in contact with the drain electrode of the current control transistor through contact holes formed in the planarizing layer and the color pixel layer; partition walls formed on the planarizing layer and the pixel electrode, adjacent ones of the partition walls defining a luminescent region of the OELD panel; an organic electro-luminescent layer formed on partition walls and the pixel electrode; and a metal electrode layer formed on the organic electro-luminescent layer to serve as a cathode of the OELD device.

Eida discloses an organic electro-luminescent device for processing multi-color gray-scale data (see Page 1 through Page 2, Para. [0016]-[0019]) comprising (see Fig. 2, Fig. 3, Fig. 4, and Fig. 7) a color pixel layer (4) formed on a second insulating layer (3) and the source and drain electrodes (52, 60), the color pixel layer (4) including red, green, and blue color filters (11; see Page 3, Para. [0067] and [0072]; Page 4,

Para. [0090]-[0091]; Page 6, Para. [0129]-[0135]; and Page 7, Para. [0149]-[0160]; in addition, see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]); a planarizing layer (10) formed on the color pixel layer (4); a pixel electrode (2) formed on the planarizing layer (10), a part of the pixel electrode (2) being extended to be in contact with the drain electrode (60) of the current control transistor (50) through contact holes (60) formed in the planarizing layer (10) and the color pixel layer (4); partition walls (3) formed on the planarizing layer (10) and the pixel electrode (2), adjacent ones of the partition walls (3) defining a luminescent region of the OELD panel (again, see Page 3, Para. [0067] and [0072]; Page 4, Para. [0090]-[0091]; Page 6, Para. [0129]-[0135]; and Page 7, Para. [0149]-[0160]; in addition, see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]); an organic electro-luminescent layer (4) formed on partition walls (3) and the pixel electrode (2); and a metal electrode layer (see (2)) formed on the organic electro-luminescent layer (4) to serve as a cathode of the OELD device (see Page 6 through Page 7, Para. 0129]-[0141]). Miller, Kimura, and Eida disclose an organic electro-luminescent device for processing multi-color gray-scale data. Kimura and Eida both disclose a structure for the electro-luminescent device comprising insulating layers and an organic electro-luminescent layer. While the structures of Kimura and Eida are different, both inventions disclose a means for providing multi-color gray-scale processing and both inventions are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Miller and Kimura with

the teachings of Eida. As such, the combined teachings of Miller, Kimura, and Eida disclose the claimed structure in which the color pixel layer includes red, green, blue, and white color filters.

19. As pertaining to **Claim 34**, Eida discloses (see Fig. 3 and Fig. 4) that the red, green, blue, and white (as disclosed by the combined inventions of Miller, Kimura, and Eida) color filters (11) of the color pixel layer (4) are each formed between the current control transistor (50) and the pixel electrode (2) in a corresponding one of the red, green, blue and white pixel regions (again, see Page 3, Para. [0067] and [0072]; Page 4, Para. [0090]-[0091]; Page 6, Para. [0129]-[0135]; and Page 7, Para. [0149]-[0160]; in addition, see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]).

20. As pertaining to **Claim 35**, Kimura discloses (see Fig. 8A-8C, 9A-9C, and 10A-10B) that the OELD panel includes:

a first insulating layer (5002) formed on a substrate (5001);

a current control transistor (5006, i.e., EL driving TFT) formed on the first insulating layer (5002), the current control transistor (5006) providing a controlled current (see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

a second insulating layer (5007) formed on the current control transistor (5006), the second insulating layer (5007) having contact holes in which source and drain

electrodes (5024, 5025) of the current control transistor are formed (again, see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

a third insulating layer (5075, 5076) formed on the second insulating layer (5007) and the source and drain electrodes (5024, 5025) of the current control transistor;

a pixel electrode (5082) formed on the third insulating layer (5075, 5076), a part of the pixel electrode (5082) being extended to be in contact with the drain electrode (5024)of the current control transistor through a contact hole formed in the third insulating layer (5075, 5076; see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47);

an organic electro-luminescent layer (5086);

and a transparent electrode layer (5087) formed on the organic electro-luminescent layer (5086) to serve as a cathode (5087) of the OELD device (again, see Col. 13, Ln. 4-19 and 50-67 through Col. 14, Ln. 1-9; also see Col. 17, Ln. 41-67 through Col. 18, Ln. 1-55; and Col. 18, Ln. 56-67 through Col. 19, Ln. 1-47).

Miller does not explicitly disclose partition walls formed on the third insulating layer and the pixel electrode, adjacent ones of the partition walls defining a luminescent region of the OELD panel; an organic electro-luminescent layer formed on partition walls and the pixel electrode; and a color pixel layer formed on the transparent

electrode layer, the color pixel layer including red, green, blue and white color filters, for emitting red, green, blue and white color light.

Eida discloses an organic electro-luminescent device for processing multi-color gray-scale data (see Page 1 through Page 2, Para. [0016]-[0019]) comprising (see Fig. 2, Fig. 3, Fig. 4, and Fig. 7) partition walls (i.e., separating walls) formed on a third insulating layer (3) and the pixel electrode (2), adjacent ones of the partition walls (3) defining a luminescent region of the OELD panel (see Page 3, Para. [0067] and [0072]; Page 4, Para. [0090]-[0091]; Page 6, Para. [0129]-[0135]; and Page 7, Para. [0149]-[0160]); an organic electro-luminescent layer (4) formed on partition walls (3) and the pixel electrode (2; see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]); a transparent electrode layer (see Page 6 through Page 7, Para. 0129]-[0141]) formed on the organic electro-luminescent layer to serve as a cathode of the OELD device; and a color pixel layer (4) formed on the transparent electrode layer, the color pixel layer (4) including red, green, and blue color filters (11; see Page 3, Para. [0067] and [0072]; Page 4, Para. [0090]-[0091]; Page 6, Para. [0129]-[0135]; and Page 7, Para. [0149]-[0160]; in addition, see Page 8, Para. [0172]-[0176]; Page 9, Para. [0197]-[0206]; and Page 10 through Page 11, Para. [0234]-[0244]). Miller, Kimura, and Eida disclose an organic electro-luminescent device for processing multi-color gray-scale data. Kimura and Eida both disclose a structure for the electro-luminescent device comprising insulating layers and an organic electro-luminescent layer. While the structures of Kimura and Eida are

different, both inventions disclose a means for providing multi-color gray-scale processing and both inventions are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Miller and Kimura with the teachings of Eida. As such, the combined teachings of Miller, Kimura, and Eida disclose the claimed structure in which the color pixel layer includes red, green, blue, and white color filters.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Siwinski (US 7,012, 588) discloses implementing red, green, blue, and white light emitting elements.

Cok, et al. (US 6,919,681) discloses a color OLED display panel utilizing red, green, blue, and white elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Mandeville whose telephone number is 571-270-3136. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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17 October 2007

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